

# VIRGINIA WILDLIFE

JUNE 2006

TWO DOLLARS





## Colonel W. Gerald Massengill Interim Director



**M**emorial Day Weekend is the official start of the boating season in Virginia and around the country. As an avid boater and angler myself, I would like to remind everyone that safe and smart boating is the key to having a great time on the water.

Many people start boating because they hunt and fish, but they don't always take the time to learn tips for safe boating. The best tip is very simple—wear a life jacket when on the boat. During tournaments, the professional anglers are now required to wear a life jacket whenever the main motor is running, and most leave it on all day.

I remind you that all boaters in Virginia are required by law to equip their vessels—no matter if it's a PWC, canoe or a 60-foot yacht—with a wearable life jacket for each person on board and that each life jacket should be readily accessible and the appropriate size for each passenger. As a grandparent, I encourage you to allow young children to pick out their own life jackets from the many designs available. This increases the child's enthusiasm for wearing it, ensures a proper fit and makes a really important fashion statement while on the water! Although not for young children, the new inflatable life jackets, which are lightweight and comfortable, are a great alternative to the bulky orange life jackets of the past. And I don't have to tell you how important it is for adults to be positive role models for safe boating.

The Department also reminds boaters that they should boat sober. If boaters choose to include alcohol in their day, they need to have a designated operator who does not drink and has the knowledge and skills needed to safely operate the boat. Like DUI convictions, Boating Under the Influence (BUI), convictions are reported to the Virginia Department of Motor Vehicles. As of July 1, 2006, anyone convicted of a Class 3 or more serious boating offense will be required by the courts to take and pass a boating safety course.

I strongly encourage everyone who spends time on the water to take a boating safety course. Why? Because the course gives longtime boaters a refresher on new laws and helps new boaters learn the rules of the waterway. Taking a course better prepares boaters for emergency situations and increases their knowledge about safety equipment requirements.

Many of the boating courses in Virginia are taught by the nearly 700 VDGIF certified volunteer boating instructors who willingly offer their time and knowledge to show others the ways of the water. As always, you can find where boating education classes are being offered in your area and get information about current boating laws by visiting our Web site at [www.dgif.virginia.gov](http://www.dgif.virginia.gov). Have a great boating season this year and please remember to keep your boating activities both safe and enjoyable!

### Mission Statement

To manage Virginia's wildlife and inland fish to maintain optimum populations of all species to serve the needs of the Commonwealth; to provide opportunity for all to enjoy wildlife, inland fish, boating and related outdoor recreation; to promote safety for persons and property in connection with boating, hunting and fishing.

*Dedicated to the Conservation of Virginia's Wildlife and Natural Resources*

Commonwealth of Virginia  
Timothy M. Kaine, Governor

## L HUNTING & FISHING ICENSE FEE S

Subsidized this publication

Secretary of Natural Resources  
L. Preston Bryant, Jr.

Department of Game and  
Inland Fisheries  
Colonel W. Gerald Massengill,  
Interim Director

### Members of the Board

Sherry Smith Crumley, Buchanan; Board Chair  
Ward Burton, Halifax  
C. Marshall Davison, Hague  
William T. Greer, Jr., Norfolk  
James W. Hazel, Oakton  
C. T. Hill, Midlothian  
Randy J. Kozuch, Alexandria  
John W. Montgomery, Jr., Sandston  
Richard E. Railey, Courtland  
Thomas A. Stroup, Fairfax  
Charles S. Yates, Cleveland

### Magazine Staff

Lee Walker, Editor  
Mel White, Ron Messina, Julia Dixon,  
Contributing Editors  
Emily Pels, Art Director  
Carol Kushlak, Production Assistant  
Tom Bidrowski, Staff Contributor

Color separations and printing by  
Nittany Valley Offset, State College, PA.

*Virginia Wildlife* (ISSN 0042 6792) is published monthly by the Virginia Department of Game and Inland Fisheries. Send all subscription orders and address changes to *Virginia Wildlife*, P. O. Box 7477, Red Oak, Iowa 51591-0477. Address all other communications concerning this publication to *Virginia Wildlife*, P. O. Box 11104, 4010 West Broad Street, Richmond, Virginia 23230-1104. Subscription rates are \$12.95 for one year, \$23.95 for two years; \$2.00 per each back issue, subject to availability. Out-of-country rate \$24.95 for one year and must be paid in U.S. funds. No refunds for amounts less than \$5.00. To subscribe, call toll-free (800) 710-9369. Postmaster: Please send all address changes to *Virginia Wildlife*, P.O. Box 7477, Red Oak, Iowa 51591-0477. Postage for periodicals paid at Richmond, Virginia and additional entry offices.

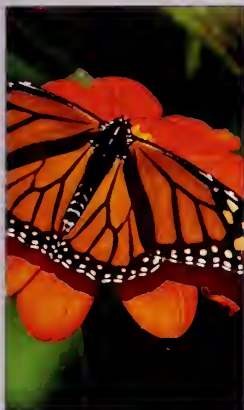
Copyright 2006 by the Virginia Department of Game and Inland Fisheries. All rights reserved.

The Department of Game and Inland Fisheries shall afford to all persons an equal access to Department programs and facilities without regard to race, color, religion, national origin, disability, sex, or age. If you believe that you have been discriminated against in any program, activity, or facility, please write: Virginia Department of Game and Inland Fisheries, ATTN: Compliance Officer, 4010 West Broad Street, P.O. Box 11104, Richmond, Virginia 23230-1104.

"This publication is intended for general informational purposes only and every effort has been made to ensure its accuracy. The information contained herein does not serve as a legal representation of fish and wildlife laws or regulations. The Virginia Department of Game and Inland Fisheries does not assume responsibility for any change in dates, regulations, or information that may occur after publication."



# JUNE CONTENTS

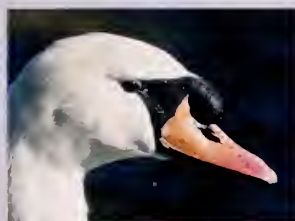


## About the Cover

The monarch butterfly is often referred to as the "milkweed butterfly" because its larvae will feed exclusively on the plant. The milkweed plant contains a poison that they use as a

defense, which makes them taste bad to birds and other predators. Monarch butterflies are found throughout Virginia and most of the United States. During late summer months millions of monarch butterflies will migrate to Mexico, while others will stay in one location all of their lives.

©Joe Mac Hudspeth, Jr.



## 4 Still the Ugly Duckling by Tom Bidrowski

Are mute swans becoming a royal nuisance in Virginia?



## 9 Mysterious Monarchs by Gail A. Brown

Experience the emerging story of migrating monarchs with students from Crestwood Elementary School.



## 14 A Tale of Two Rivers by Jack Trammell

Explore the scenic beauty and local history as you float the North and South Anna rivers.



## 19 Catch & Release by Tee Clarkson

Whether voluntary or required, releasing fish properly is key to their survival



## 23 2005 Angler of the Year

## 24 2005 Angler Hall of Fame

## 26 JUNE JOURNAL

### 31 Photo Tips *What the Heck is a Pixel?*

### 32 On The Water *Boat Battery Power*

### 33 Recipes *Let's Eat More Tilapia and Catfish*

### 34 Naturally Wild *Canada Warbler*

## VIRGINIA WILDLIFE

### Magazine Subscriptions

For subscriptions,  
circulation problems and  
address changes call

1-800-710-9369

12 issues for \$12.95

24 issues for \$23.95



©Len Rue Jr.

# *Still the* Ugly Duckling

They may be pretty to look at, but the mute swan is now threatening to disrupt an entire ecosystem.

by Tom Bidrowski

For many, the word "swan" is synonymous with nature, beauty, and romance. Swans have been the features of ballets, children's fables, mythic lore, greeting cards and even postage stamps. So why is the idyllic picture of a mute swan (*Cygnus olor*) in conflict with these images? For in Virginia, the tale of the mute swan has not been a fairy tale.



## The Story of the Mute Swan in Virginia

The story of the mute swans begins in the 19th and early 20th century, when they were introduced in North America as decorative pieces to adorn estates and town parks perhaps, in reminiscence of Old England. Progeny of these swans and recent releases from private aviaries during the past 30 to 40 years have led to a growing feral mute swan population in the Commonwealth. Mute swans are native to Europe and Asia but have adapted in North America. They have adjusted to and are often found in parks, golf courses and private ponds. They can also be found in our more typical waterfowl habitats such as the marshes of Chesapeake Bay. In fact, this is where the largest concentration of mute swans in North America can be found. Other significant populations of feral swans can be found on the Great Lakes, and in Rhode Island and New York. Virginia has two major habitats or populations of mute swan. The first is a Chesapeake Bay population, which is mostly concentrated around the Tangier/Smith/Fox Island chain and extending to the Western Bay Shore. This is a growing feral flock that readily trades back and forth between Maryland and Virginia and ranges in numbers from 100 to 800 birds. The second metapopulation can be found scattered on inland waters. They are more recently established, originating from poorly intentioned and illegal releases with epicenters around Williamsburg, Chesterfield, Charlottesville and Warrenton.

Due to the high reproductive success of these birds and the current releases/escapes from private collections, mute swans have increased dramatically during the past 20 years. Virginia's mute swan population level is at a critical stage in its population growth curve. In 1986 when the first statewide census of mute swans was taken, 60 individuals were located; 16 years later, in 2005, that number jumped to 725 swans and is growing approximately

©Leonard Lee Rue III



©Dwight Dyke



©John R. Ford



*Top: The mute swan is an exotic species, which was introduced into North America 60 to 70 years ago. Mute swans are intermediate in size between tundra (middle) and trumpeter swans, and larger than a snow goose (above). Mute swans weigh between 18 to 25 pounds. They have an orange and black bill as opposed to the black bill of the tundra and the snow goose, which is similar in appearance, but has a pink bill with a black patch along its mandibles. Unlike the tundra, trumpeter and snow goose, the mute swan is not a migratory species and spends both summer and winter in Virginia.*

5 percent annually. Although the heaviest concentration of swans can still be found on the Chesapeake Bay Islands, the greatest increase has been recorded on inland ponds and accounts for nearly 75 percent of Virginia's mute swans. This is in contrast to Maryland in which nearly all of their 4,000 swans are found around the Bay.

### Identifying the Mute Swan

Like all swans indigenous to the Northern Hemisphere, both adult cobs (males) and pens (females) have white plumage, though there may be some orange staining on the head, neck and/or chest. The staining is due to living in tannic or dark staining water or from areas with red clay soils as in Virginia's Piedmont. Closely resembling, though slightly heavier than the native tundra swan, mute swans can be distinguished by its orange bill with a black knob on the forehead. This feature is often more prominent in males. Cygnets (young swans) also resemble the native tundra swan. They are a dull gray until their second or third year and can have a pink to dull gray bill. Mute swans can also be identified on the water by their characteristic posture: necks held in an S-shaped position, bills pointed downward, wings arched over backs, almost in a sailboat position. They are the only swans in the Northern Hemisphere that exhibit this trait. Lacking vocal structures, mute swans are, indeed, relatively silent. They do hiss or snort when threatened or agitated, whereas tundra swans make a more melodious "woo-ho, woo-ho, woo-ho" song. Being a large bodied bird (weighing 18 to 25 pounds and standing 55 to 60 inches tall), most swans make a creaking or droning sound during flight that is generated by their wings.

For the most part, all swans are herbaceous feeding on submerged aquatic vegetation (SAV), algae and agricultural waste grain and winter wheat. However, they do feed on invertebrates such as clams, shrimp and snails. This is an important com-





©Dwight Dyke

## Our Native Swans

Our native tundra swan (*Cygnus columbianus*) is the most numerous swan in Virginia but only occurs in the state from November to March. Each year an estimated 7,000 to 10,000 of these Arctic visitors are attracted to the rich marshes of Virginia's Chesapeake Bay and its tributary rivers and associated tidal creeks. They can be generally distinguished from mute swans in that tundra swans generally hold their necks more erect and their wings lie flat to their bodies. They are slightly

assess the migration patterns and winter ecology of tundra swans. Specifically, scientists are trying to determine where tundra swans breed and what routes they fly to get here, where these swans go in the winter, what kinds of habitats they use in Virginia, and what their survival rates are. More information on this study can be found at VDGIF's Website.

Historically, a relatively small number of trumpeter swans wintered in the Atlantic Flyway and in Virginia. This swan was extirpated along the East Coast by unregulated

ponent of their diet that is necessary for calcium and protein for egg production and feather growth. Mute swans in city parks are often supplemented through artificial feeding. So with other wildlife, this practice often leads to more harm than it helps. It makes birds dependent on humans, increases the potential to spread diseases, and provides an unbalanced diet. Additionally, as swans acclimate to humans they become more aggressive and potentially dangerous.

Mute swans reach sexual maturity at 3 to 4 years of age. They start building a nest in April, which consist of large mats of dead vegetation up to 6 feet round and 4 feet tall in the marsh. They lay four to eight pale grayish eggs that will hatch in 35 to 38 days after the last egg is laid. Both the male and female may incubate the eggs with the pen serving most of the nesting duties. This is unique compared to native North American waterfowl in that the male rarely sits on the nest. Mute swans vigorously defend nesting territories, which can range from four to 10 acres. When broods are present, swans may increase territory to secure food sources for their young. They form life-long pair bonds; however, if a mate dies they will seek a new mate. Polygamous males are not uncommon and males may choose a new mate if their mate fails to be productive. In recent studies, it was found that males may "divorce" up to three times during their life span which may be as long as 20 to 30 years.



©Len Rue Jr.

*Mute swans have adapted to living around people and can be found in parks, golf courses and private ponds. Mute swans have been nesting in Virginia (above) for over 20 years and their numbers are increasing. A major concern of the mute swan is that it competes for food and habitat that our native waterfowl relies on and can displace other native bird species, such as shorebirds, terns and skimmers.*

smaller and have a black bill. Tundra swans can have a varying amount of yellow on the lore—the area between eye and the bill. As their name implies tundra swans nest in the tundra region of North America. The Virginia Department of Game and Inland Fisheries (VDGIF) is cooperating with Cornell University and other Atlantic Flyway states to better

commercial harvests and the millenary trade in the late 1800s and early 1900s. Now trumpeter swans are a rare visitor to the Commonwealth. The continental trumpeter swan currently numbers around 16,000 with the vast majority found in the Western U.S. and Alaska. They are the largest of North American waterfowl weighing 20 to 30 pounds with a wingspan up to 8 feet. They are similar in appearance to the tundra swan, but can be generally distinguished by their large size and the lack of yellow spot on the bill. The trumpeter swan's call is deeper and more resonant than that of the tundra swan and has been described as sounding more like a trumpet, hence their name.



## Mute Swans Making Noise

A rose may be a rose but a swan is not a swan. Despite their aesthetic appeal, mute swans can be problematic. As with many other examples of when an exotic species is introduced into a system where it did not originate, problems do arise. The large size of the birds requires them to consume massive quantities of aquatic vegetation—up to 8 pounds per bird per day. This makes them a direct hindrance to restoration and preservation efforts on sea grass beds in the

Chesapeake Bay. Sea grasses and other SAVs are the cornerstone on which the Bay's ecosystem is built, as they filter water, buffer excessive nutrients and toxins, protect against erosion, and provide habitats to countless animals. Feeding on SAVs may be good for a hungry swan, but negatively impacts the rest of the watershed community.

Mute swans also directly compete for these aquatic resources with our native wildlife, particularly tundra swans, for these aquatic resources. For centuries, tundra swans have fed on the Bay's SAVs and the

rich invertebrate life associated with them during the winter months. Mute swans, on the other hand, feed on the grasses year round, nibbling clear to the roots, stolons and rhizomes that lead to the destruction of the plants. During the winter, mute swans are more likely to feed on the nutrient storage and over wintering plant structures (tubers), which can impact the long-term health of both individual plants and the ecosystems they compose.

Mute swans are some of the world's most aggressive waterfowl species. They will attack and prohibit tundra swans and other waterfowl from using an area and have been reported to attack and kill ducks, Canada geese, grebes and herons. Mute swans indirectly impact other birds by denuding the vegetation on the Bay's small islands where ducks, shorebirds and songbirds nest; they wreak havoc on tern, pelican and other bird rookeries by trampling eggs and driving off adult birds attempting to nest. Breeding pairs of mute swans are highly aggressive and will defend the nest and young adamantly, using their powerful wings and strong bills to drive away other waterfowl and even humans. The defensive behaviors exhibited by these large birds can pose a safety risk, especially to small children and to people swimming or using small watercraft. Although the potential for injury is low, experiencing these displays of aggression can be traumatic and may prevent landowners from using their shoreline property.

Following the Chesapeake Bay Program Chesapeake 2000 Agreement, signed by the Governors of Pennsylvania, Maryland and Virginia, the Chesapeake Bay Program Invasive Species Workgroup identi-

*Left: The Department is cooperating with Cornell University and the Atlantic Flyway states of Maryland, Pennsylvania and North Carolina in a tundra swan study to better assess their migration patterns and winter ecology. The study addresses management concerns such as human-swan interactions, restoration efforts, hunting regulations and future population management strategies.*



©John R. Ford



fied mute swans as one of the top six non-native species that are causing or have the potential to cause significant impacts to the Bay's aquatic ecosystem. The goal of the Workgroup is to develop a plan "to manage the Chesapeake Bay population of mutes swans to a level that a.) minimizes the impacts on native wildlife, important habitats, and local economies; b.) minimizes conflicts with humans; c.) is in agreement with Chesapeake 2000 Agreement goals for SAV and

Order that defined invasive species as "an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health"; and directed all federal government agencies to prevent the introduction of invasive species and provide for their control; and a U.S. Fish & Wildlife Service policy directing National Wildlife Refuges to take effective steps to control mute swans and prevent destruction and degradation of wetland habitats.

species list and giving regulating authority for mute swans to the Federal government. This also made it necessary to obtain a USFWS permit to possess mute swans and prohibit the sale, gift and importation of swans or their eggs. Prior to the U.S. Court of Appeals ruling, VDGIF had the flexibility to manage mute swans in Virginia. As a listed nuisance species in Virginia, VDGIF had the ability to control mute swans when they caused conflict, imposed economical damage or posed a threat to the environment.

In January of 2005, Congress passed the Migratory Bird Treaty Reform Act of 2004. This legislation specifically addressed and clarified the distinction between native and non-native migratory bird species and their management. The passage of this legislation will help to re-establish the original intent of the Migratory Bird Treaty Act and will enable states to direct efforts towards the management of these species. Mute swans are now, once again, listed as a nuisance species in Virginia. To further restrict the spread of feral swans, the Virginia Department of Game and Inland Fisheries also requires a state permit to possess, propagate, buy and sell any swan in Virginia. This includes other non-native species such as the Australian black swan and the South American black-necked swan, both of which have been released in Virginia.

## Swan Song

The tale of the ugly duckling is not over. What started as the misguided releases of a few swans has resulted in the growing distribution of feral mute swans across Virginia. The mute swan's destruction of our wetland habitats has had detrimental impacts on our native fauna. Mute swans competitive advantage over native fauna has made them a nuisance. Although VDGIF is working to decrease mute swan impacts, we are doing so with the hope of—among other things—protecting and improving habitat for our native species. □

*Tom Bidrowski is the Waterfowl Project Leader for the Virginia Department of Game and Inland Fisheries.*



©Leonard Lee Rue III

invasive species; and d.) is in agreement with the Atlantic Flyway Council Mute Swan Plan." The Atlantic Flyway Council is made up of 17 states and provinces along the East Coast and acts as an advisory body to the U.S. Fish and Wildlife Service (USFWS) in matters regarding migratory game birds. The Atlantic Flyway Council's goal is "to reduce mute swan population in the Atlantic Flyway to levels that will minimize negative impacts to wetland habitats and native migratory waterfowl and to prevent further range expansion into unoccupied areas." Other policies developed to manage invasive species include: a 1999 Presidential

## Swans in Court and Congress

Until 2002 mute swans were listed as a nuisance species in Virginia. Other bird species on the list includes: English house sparrows (*Passer domesticus*), European starlings (*Sturnus vulgaris*), and pigeons (*Columba livia*). A 2001 U.S. Court of Appeals decision (Hill vs. Norton) ruled that since the mute swan is a "swan" and, therefore, a member of the Family of "Anatidae," they should be afforded protection under the Migratory Bird Treaty Act of 1918. This resulted in removing mute swans from the Virginia nuisance



# Mysterious Monarchs

## *Monitoring monarch butterflies in the classroom.*

by Gail A. Brown

**L**ed by fearless kindergarten teacher, Judy Nickels, students and staff at Crestwood Elementary School, in Chesterfield County, hunt, raise, tag and release monarch butterflies each September in their efforts to become good stewards of the environment. Each fall monarchs make their way from Canada across the Commonwealth and on to the distant fir forests in the states of Michoacan and Mexico in central Mexico. Each year Crestwood students grow milkweed (food for the monarchs), provide care for the monarchs through their metamorphism from caterpillar to butterfly, and participate in the University of Kansas' Monarch Watch tagging program before sending their hearts and prayers with their brightly colored friends on their 2000 mile journey to a distant land.

©Rob & Ann Simpson



©Gail A. Brown

*In the final stage  
of metamorphosis  
the chrysalis becomes  
transparent revealing the wings of the  
emerging monarch. Top: Children in class  
photo. ©Gail A. Brown*



## The Mysterious Monarch

Named in sixteenth century America after British royalty, boldly tiger-like, orange, black, and white, belying its delicate appearance, the monarch demonstrates a unique power and tenacity as it migrates thousands of miles from Toronto, Canada to distant rural southwest Mexico. While many monarchs leave Toronto and fly along the Pacific coast to California or the Eastern Coast to Florida, it is believed the majority take central routes through states east of the Rocky Mountains

mate. In April the females leave on the return journey and lay eggs for future generations to be born. Knowing where they go doesn't begin to unravel the mystery of why or how they are able to make this daunting autumn pilgrimage to Mexico and back. Since the migration home takes longer than monarchs live, it is the third and even fourth generation that completes the journey begun by their great-grandparents.

While the elements of nature, including storms, floods and droughts, have affected survival, modern life is taking its toll on the monarch popula-

trees and foliage around the sanctuaries. As the trees are removed, so is the protection and warmth they supply to the monarchs. On the high mountain peaks the monarchs fall victim to the cold and frost that accompanies high altitudes. Even on a limited scale, habitat destruction reduces the likelihood of the monarch's survival. The Mexican government has created several sanctuaries to protect the monarchs that are open to the public for several months each year.

Dr. Lincoln Brower, Professor of Biology at Virginia's Sweet Briar Col-



©Gail A. Brown

and on to Texas and the wintering sanctuaries of Mexico.

While researchers sought to discover the monarchs' final destination, it wasn't until 1975 that a team of scientists found their wintering habitat in the high Transvolcanic Mountains that run along the Pacific coast of Mexico. It is high in these mountains, clinging together in thick colonies to the branches of the oyamel (fir) trees that the monarchs remain until the spring. It is estimated that as many as 200,000,000 to 500,000,000 monarchs reach this small strip of densely treed mountainous forests where their collective weight bends branches and inspires all who witness this amazing sight. During the winter the monarchs remain hidden high in the mountains until early March when they begin to



Left: Kindergarten teacher Judy Nickels holds a sign designating Crestwood an official Monarch Waystation.

Above: Students observe blue vine milkweed pods, which have burst revealing seeds.

tion as well. It is believed that the effects of the pollen from genetically manufactured grains change milkweed in a way that reduces the toxins the plants naturally produce. These toxins when ingested by the monarch during the larva stage make the monarch unpalatable to its predators. The use of pesticides in areas where monarchs feed as well as the overall destruction of their main food source, milkweed plants, all affect the monarchs' survival and thwart its ability to migrate.

Extremely damaging and a major concern is the clear-cutting of

lege and expert on monarchs' migration pattern, believes the monarch population will be devastated in only 20 years if the destructive clear-cutting of oyamel trees is not controlled. The World Wildlife Fund, the Mexican Foundation for the Conservation of Nature, and the Mexican government are working together to address this threatening issue.

### Crestwood's Story

In the April 2003 issue of *Virginia Wildlife*, on page 32 the Crestwood students and staff received recognition and support from the Department of Game and Inland Fisheries for Crestwood's efforts to care for Virginia's natural resources. Everything accomplished involved families and the extended school community. Mrs. Nickels is right there up-





© Gail A. Brown



© Gail A. Brown

Left: Kindergarten students develop scientific observation skills studying a tropical milkweed plant. Right: Students decorated costumes and use imaginative play to promote an understanding of the monarchs' incredible journey.

front, 2nd from the left, with a big smile on her face. She must have known what a success our program would be!

Due to a generous grant from Dominion Virginia Power to support environmental education for students and families, Crestwood Elementary School was able to purchase school-wide supplies such as butterfly nets, books, educational materials, milk-

weed seeds, and the tags from Monarch Watch to help start the monarch tagging program. The grant also enabled the school to give world famous entomologist, Dr. Lincoln Brower, an honorarium to come to Crestwood to talk to the entire student body. That same evening, Dr. Brower talked to an overflowing crowd of Crestwood families about the monarch migration and the dangers the monarchs face due to current environmental stresses. Mrs. Nickels' students performed a musical reenactment about the monarch for Dr. Brower, the very same play they performed this June in Washington, DC, to help celebrate the flight of the Pa-

palotzin, an ultralight plane decorated to look like a monarch and designed to follow the monarchs' migration route. The Papalotzin Project, dedicated to educating citizens of all countries about Monarchs, is recognized and supported by the World Wildlife Fund.

Mrs. Nickels trained the teachers and support staff throughout the year about the development of monarchs and their incredulous migration. The entire staff was offered the opportunity to go to the IMAX theatre at Richmond's Science Museum to see *Amazing Journeys*, a documentary about migration. From the very beginning the PTA showed great support for all of Crestwood's environmental programs. Their continued efforts to keep the program going made all the difference. While 300 milkweed plants were planted in the spring, it took the efforts of PTA volunteers to care for the plants during the long summer drought. Mrs. Nickels and her husband, Ken, were also observed on school grounds stalking aphids, picking them off of the plants, and making sure everything was OK!

When tiny white eggs were observed on the underside of the milkweed leaves, each stalk was picked and placed in long butterfly nets in each classroom. Soon tiny monarch caterpillars began eating the milkweed, and more milkweed had to be brought in to feed these hungry critters. As the days progressed the children had the unique opportunity to observe and care for the caterpillars through all the stages of metamorphosis. As the monarchs emerged from their chrysalids and stretched their wings to dry, the children were right there, a part of one of the most intriguing mysteries of nature. The children and teachers gently held each monarch and placed a circular



Lee Walker

Left: Russell Baxter, then Assistant Secretary of Natural Resources, and Suzie Gilley, Department of Game and Inland Fisheries, present a Virginia Naturally pennant recognizing the environmental efforts of the proud Crestwood students and staff.



tag on the underside of its wing before taking it outside. Each day cheers echoed as classes released their monarchs, watching them fly high and circle the garden as if to say "thank you" before beginning their long flight south to Mexico.

By the end of October all the monarchs have left and the nets and supplies have been put away for another year. But the beauty of the shared experience remains and brings the school closer as a community of learners and environmentalists. For a short while Crestwood was part of the beauty and peace of the natural world. We are all changed by this experience and are better citizens for it. □

*Gail Brown is a retired principal for Chesterfield County Public Schools. She is a lifelong learner and educator, and her teaching and administrative experiences in grades K-12 have taught her that project-based environmental programs teach science standards, promote core values, and provide exciting educational experiences for the entire community.*

### Resources to Help You on Your Journey

The following resources provide more information about the monarch and the Monarch Watch tagging program. To help promote interest in the program share this article with your local school and help provide support through the local parent organizations. Mrs. Nickels has written a children's book called *A Monarch's Journey* that is an excellent resource for both families and school libraries. She is willing to help and can be reached at [nickelsk@comcast.net](mailto:nickelsk@comcast.net) or [judith\\_nickels@ccpsnet.net](mailto:judith_nickels@ccpsnet.net).

*A Monarch's Journey* by Judith Nickels

Journey North:  
[www.learner.org/jnorth](http://www.learner.org/jnorth)

Monarch Watch  
University of Kansas  
1200 Sunnyside Ave.  
Lawrence, KS 66045  
[www.Monarchwatch.org](http://www.Monarchwatch.org)

Papalotzin Project:  
[www.papalotzin.com](http://www.papalotzin.com)



©Gail A. Brown

Top: Second grade students perform a musical reenactment of the monarchs' development and journey to Mexico. Bottom: Once dry the monarchs need fuel (nectar) from flowering plants for the energy needed to reach Mexico.



©Gail A. Brown



# Tagging Monarchs

**T**he migrating monarchs take a route through Virginia as they travel across the eastern coast of the United States each fall. Monarchs are seen across the Commonwealth and many follow bird migration routes as they travel on thermal currents. While Virginians can't stop the destruction of the forests in Mexico they can support the monarch migration by providing a food source, helping to document migration numbers, and by teaching children to appreciate this wonder of the natural world. Feeding and tagging monarchs is a way to bring school communities together, promote shared values, and enjoy the beauty of the natural world. It is a wonderful experience to share with the entire family. If your school or family would like to join others in this great adventure just take the following steps:

- ◆ Plant some milkweed in the early spring to create a food source for the developing monarch caterpillars. Seeds for milkweed for the caterpillars' food may be purchased from Monarch Watch.

- ◆ Provide a food source for the monarch butterflies that stop by on the way to and from Mexico as well as for the butterflies just raised. Butterflies need food before they fly south;

remember the caterpillars eat milkweed leaves, but the butterflies need the nectar from flowers. Plant a beautiful butterfly garden that all will enjoy.

- ◆ Watch for monarchs in the garden in August and early September. The female will lay tiny white eggs on the underside of the milkweed plants. To only observe the monarchs as they grow and play, stop right there! If you want to raise, tag and record information for Monarch Watch contact [www.monarchwatch.org](http://www.monarchwatch.org).

- ◆ To tag monarchs, bring the stalks of milkweed with eggs on them inside and place in a butterfly net. The eggs will hatch in two to three days and a tiny caterpillar will emerge and begin to devour the milkweed. This larva stage lasts for about two weeks, during which time the caterpillar sheds its skin five times! The milkweed will have to be replaced often as these little caterpillars eat a lot. Both science and values are taught as children act responsibly in caring for "their" butterflies.

- ◆ A beautiful jade green and gold-threaded chrysalis forms. Inside the chrysalis, metamorphosis takes place. In about 12 to 14 days, just before the monarch emerges, the chrysalis will turn a deep black. The monarch is visible inside the chrysalis. Children realize they are looking at a miracle of nature.

- ◆ The monarch emerges and will flap its wings to dry itself and pump blood through its body. It will remain sluggish for about three hours. Just before it appears ready to take off, apply the coded tag to the back underside of the wing. Monarchwatch.org provides detailed information for this as well as all stages of this adventure.

- ◆ Some children will name their butterfly. Experiences such as this help teach children to respect nature and preserve what is beautiful around us. Happy hunting! □

*This tiny, white monarch egg on a leaf of blue vine milkweed will hatch in 2 to 3 days.*

©Gail A. Brown

*Monarch caterpillars form a "J" shape and hang upside down before forming a chrysalis.*

©Gail A. Brown

*Monarch caterpillars, chrysalides and emerging butterflies are kept in a protected environment at home and school.*

©Gail A. Brown

*Coded tags containing critical information are carefully placed on the dry wings. Tagging information and procedures are obtained by contacting [Monarchwatch.org](http://Monarchwatch.org).*

©Gail A. Brown





Lee Walker

# A Tale of Two Rivers

*From pioneer bateaux to modern  
kayaks, the North and South Anna  
rivers are central Virginia's little  
known secrets.*





©Dwight Dyke



Lee Walker

by Jack Trammell

The big question for most people is what to do at the falls. A recent fisherman paid too much attention to the fish and went over twin six-foot drops in his johnboat, somehow not capsizing. A dog is once said to have survived the trip over the falls and into the "Devil's Hole." Those who have canoed over the falls swear to the man (or woman) that they won't do it again. Even kayakers, seekers of the whitest water, often portage around them, sometimes helped by the site of a wrecked canoe on a boulder at the end of the falls. The Fallsline Rapid is the highlight of central Virginia's hidden jewels, the North and South Anna rivers.



Many landmarks and rivers in the new world were named after Queen Anne, during her early 18th century reign.

The North Anna and South Anna rivers flow through the heart of the central Virginia piedmont, joining to form the Pamunkey River and eventually feeding into the Chesapeake Bay. Although historians and sportsmen perhaps better know the Pamunkey River, and then the York River it helps form, the North and South Anna both frame some of Virginia's most beautiful scenery and whitewater canoeing, and are part of a fascinating history that dates back to the Jamestown Colony, and the native culture before that.

The names "North Anna" and "South Anna" actually reflect the politics and history of the period when English settlers first explored the rivers. In England during the late 1600s, Princess Anne was growing up in an atmosphere of controversy. Her father, James II (the Duke of York) and Italian stepmother wished to have her raised as a Catholic. She was raised as a Protestant (like her real mother, Anne Hyde) by a determined behind-the-scenes Bishop, and later in life actually supported an alliance against her Catholic father which forced him into exile after a short reign as King. Anne's sister, Mary, then ruled with her husband,

William, and when they died the throne passed to Anne. During her rule, which began in 1702, a series of rivers (and other landmarks) in Virginia were named in her honor: the Rivanna River ("River Anne"), the Fluvanna River ("Annie's River," and actually part of the modern James), the Rapidan River ("Rapid Anne"), and the North and South Anna Rivers.

The North and South Anna have distinctly different personalities, however, and harbor unique opportunities for the modern explorer.



Lee Walker

The South Anna River (opposite page) and the North Anna are both excellent rivers for canoeing, but paddlers are warned that water levels change rapidly with the weather and to take caution when running any rapids. Upper left: The North and South Anna rivers are fed by 9600-acre Lake Anna. Kentucky (spotted) bass inhabit both Annas, and are often mistaken for their largemouth and smallmouth cousins.

The North Anna originates in the hills of present day Orange County, close to the historic town of Gordonsville. In Colonial Days, especially after the cultivation of tobacco became widespread, numerous villages with wharfs lined the banks of the North Anna as far west as bateaux (river rafts) could navigate. Mills to grind meal were constructed every few miles, and a narrow wagon road ran beside the bank for most of its length. Numerous fords served as





Lee Walker

The old Telegraph Road crossing at the North Anna, near Route 1, was the site of several Civil War encounters.

crossing points where small communities sprouted up.

Today the upper North Anna is mostly contained within Lake Anna, a 17-mile long, man-made body of water that serves as a cooling system for a nuclear power plant and provides various recreational opportunities. The lower portion of the river, however, remains unspoiled and provides quality white water and wilderness site seeing. Beginning at the Concord Bridge (and not above it where a dangerous, debris infested dam blocks the way) the North Anna is a delightful sequence of fast and sometimes challenging class I and II rapids, with an occasional class III

rapid, tumbling 17 miles or so down to the Fallsline Rapid (Class IV, and definitely for experts only) and U.S. Route 1. Prospective canoeists are referred for more details to *Virginia Whitewater, A Paddler's Guide to the Rivers of Virginia* by H. Roger Corbett, a book that covers both Anna rivers.

There are basically four takeouts on this stretch of river, with the last two (Butler's Bridge and Route 1) being almost 10 miles apart. The bridges frequently are overgrown, and it is advisable to have a pair of

long pants to get your canoe in the water.

The water itself is usually very clear, even after moderate rains, and cool enough to support a small-mouth bass population. The last segment also includes the two most impressive rapids: the 400 Yard Rapid, which is a delightful, zigzagging challenge that will leave even accomplished canoeists a little mentally exhausted, and the Fallsline Rapid, a beautiful and dangerous sequence of three sharp drops 3 to 6 feet in height,



Lee Walker

## Additional Information

The Anna rivers are largely contained in or border Hanover County, and the first-time visitor is encouraged to contact the County's Web site for information about the area at: <http://www.co.hanover.va.us>. Information about boat ramps in Hanover County can be found at: <http://www.co.hanover.va.us/park-srec/default.htm>. General information for the central Virginia tourist or visitor can be found at: <http://www.richmondva.org>. In addition, the other "Anna" rivers, Rapidan, Rivanna, and upper James, also offer excellent canoeing and fishing opportunities

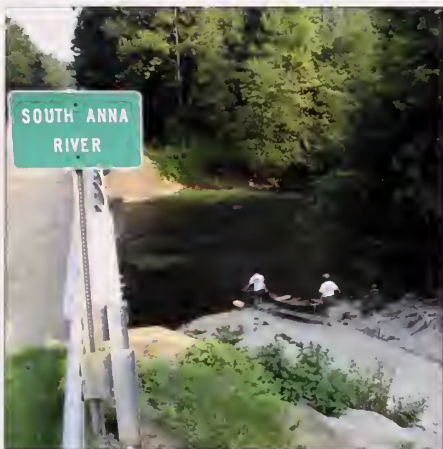


The North and South Anna rivers flow through the heart of central Virginia north of Richmond.



which is actually a class V in high water. The answer to the earlier question is: portage around it.

The scenery along the North Anna today is very similar to how it may have looked when the European settlers first arrived. From Butler's Bridge east is a virtual wilderness, due partially to events from the Civil War. When General Grant took control in the eastern theatre in 1864, he began a series of hammering battles intended to break Lee's Army of Northern Virginia. The maneuvering



Lee Walker

South Anna River follows the terrain south, and then eastward through mostly flat farmland in Louisa and Hanover counties. More Southern in temperament, the South Anna is slower, warmer, darker (colored by the local clay), and shaded by large over-hanging trees on both banks, which are generally steep, muddy and up to 10 feet high.

The South Anna is home to numerous old mills, and in several cases the original structures and dams are still intact. While the North Anna mill



Lee Walker

of the two massive armies eventually placed them on either side of the North Anna River between Butler's Bridge and today's U.S. Route 1. The modern canoeist can see old roadbeds, stone chimneys and abandoned cemeteries—these are the remnants of communities that the fighting displaced or destroyed. The remnants of the battlefield itself are hidden in the surrounding trees, largely on private property. Today there are only deer, beavers, blue herons and raccoons populating the riverbanks.

The South Anna, in contrast, is a river that has not so completely hidden its history. Also originating in present-day Orange County only a mile or so from her sister river, the

*Both the North (upper left) and South Anna (above) are noted as excellent light angling rivers, with good populations of large and smallmouth bass and bream. Top: The Route 33 boating access ramp on the South Anna is a favorite put-in point for anglers and paddlers.*





Lee Walker

*The slow and tranquil spirit of the South Anna River is reflected by those who experience its natural beauty and angling action. And where the biggest decision of the day may be where to stop for an afternoon nap or what lure to use.*

sites have largely broken up into rock-strewn rapids due to the swifter current and the destruction of the Civil War, the South Anna's dams are more recognizable, and are often surrounded by ruins. They make postcard-picture lunch spots, or the ideal place for an afternoon siesta, and are usually the best fishing spots.

The South Anna is still surrounded by farmland and residential areas, as it has been for hundreds of years, and usually these areas encroach right up to the edge of the riverbanks. During the Civil War, the South Anna was frequently crossed by cavalry of both sides in cat and mouse games around the Confederate capital, Richmond. Some of the fords where they crossed are gravel beds with recognizable slumps in the riverbanks, revealing the location of old roads. Earlier than that, Banastre Tarleton's British raiders entered central Virginia through the funnel of the Anna rivers, using some of the same fords to terrorize and plunder the local population. "Bloody Ban" earned his

nickname earlier in the Revolutionary War when he slaughtered surrendering American soldiers in North Carolina, but sealed his place in history with a wave of depredations in central Virginia that almost resulted in the capture of Thomas Jefferson. Despite the approach on both sides of civilization, wildlife also abounds on the South Anna River, including an occasional bald eagle, which is making a comeback in central Virginia.

Unlike the North Anna, the South Anna enjoys a number of friendly take-outs and put-ins, including two recently constructed ramps on Route 33 and Route 54. Canoeing between these two spots makes an excellent day trip and a good initiation to the river. There are some small gravel beds, and Class I/II rock gardens, although some paddling is necessary on some calm stretches.

The best white water on the South Anna is at Casco Mills. Between Casco Mills and Route 33 are two very challenging Class II rapids, difficult to run in low water without leaving some paint behind on the rocks; thrilling, but run with caution when the water is up. Unfortunately, there is not convenient access at the Casco Mills Bridge.

There are some smaller Class I rapids and numerous riffles further

upstream from Casco Mills, though the upper South Anna is infamous for its unexpected obstacles. Recently, a pair of canoeists found the entire river blocked by several dozen huge trees, which a flood had deposited in one great heap along a turn in the river. A portage up the steep banks and through poison ivy followed, souring the trip. If the obstacles are discounted, though, the South Anna may be Virginia's longest canoeable small river. Many fishermen choose to take on the obstacles in return for excellent float fishing.

Both rivers are best canoed in the spring and fall during moderately high water levels, and offer an unexpected look at central Virginia's wilder side, with lots of history thrown in. The North Anna generally has more and better white water,

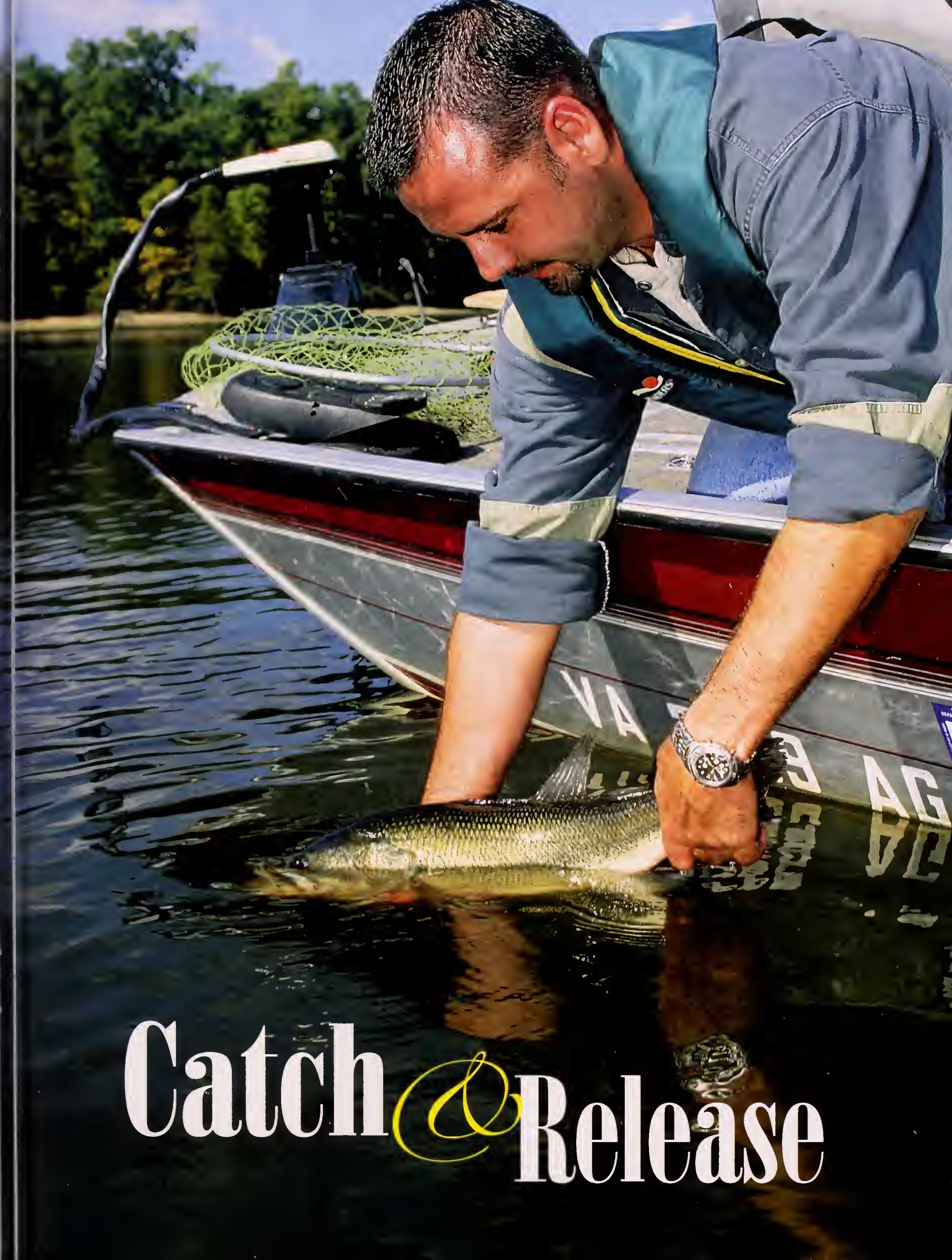


Lee Walker

more spectacular wilderness scenery (10-foot wild azaleas, for example), and an unprecedented opportunity to paddle through the middle of a major undeveloped Civil War battlefield (remember that private property lines both banks). The South Anna is more of a floater's paradise, a river where an inner tube can take you as far as a canoe, with just enough rapids and riffles to keep you from taking a long nap. More people fish the South Anna because of the easy access, and there are smallmouth bass in and around the old dam sites. □

*Jack Trammell is a writer and outdoorsman who lives near the South Anna River, and frequently canoes and fishes there. He writes about his outdoor travels, history and has also published several novels, including Gray, a Civil War murder mystery set in central Virginia.*





# Catch & Release





by Tee Clarkson  
photos ©Dwight Dyke

**Helpful tips for  
properly handling  
your catch and  
releasing it to  
fight another day.**

**W**hen the fish are biting there's only one place to be, on the water. And when they're biting I like to stay all day, dawn to dusk. At the end of the day, under cover of darkness, you will find me loading my gear back in the car. Piling in rods, tackle boxes, coolers, empty sardine cans, exhausted. What I don't usually have are any fish to clean, and not because I didn't catch any. Just because I let them all go.

Don't get me wrong, I like eating fish. I love a fried crappie fillet almost as much as fried grouper covered in lump crabmeat, well maybe not, but I do like eating freshwater fish. I just don't like cleaning them after a long day of fishing. I'd rather swing by the store and pick up a couple pieces of fried chicken for the drive home. So in the end I have become mostly a catch-and-release fisherman, not out of ethics so much as laziness. "Know thyself," I guess.

Regardless, there are lots of reasons we let fish go: some are too small, some too big, some don't taste as good as others, sometimes we have enough already, and sometimes we're not allowed to keep them at all. Considering the following factors will help ensure the survival of those let go so that we have a chance to catch them the next time we're on the water.

## **Tackle:**

Getting fish to the boat as quickly as possible after they're hooked is key to their survival when released. This requires the right tackle. Make sure the tackle you are using allows you to land the fish in a reasonable amount of time.

A good indicator that a fish is ready to come in is when it initially comes to the surface on its side. Usu-

*If unable to leave your catch in the water while unhooking it a nonabrasive type net is recommended. You should always try to avoid handling fish with your hands.*



ally this marks a fish that is easy to handle and can be released quickly and without harm.

Hooks are an important factor in releasing fish as well. Pinching down the barb on your hooks will allow for an easier release. Whenever possible use circle hooks, especially when fishing bait. Circle hooks are designed to hook fish in the side of the mouth, preventing "gut hooking." In the event that you do hook a fish too deep, the best thing to do is cut the line as close to the hook as possible and let the fish go. Oftentimes the hook will dissolve in a few days and the fish will be fine.

rivers can reach the mid 80's. Water that warm is very stressful on fish due to a lack of oxygen. Keep this in mind, and let them go as quickly as possible.

Another factor to consider is that "too much stress on a fish within several days of spawning definitely reduces the potential for optimum spawn," according to Chris. Most freshwater fish spawn in the spring, with the exception of brown and brook trout.

Fighting fish quickly and releasing them as soon as possible when they are spawning thus becomes even more important.

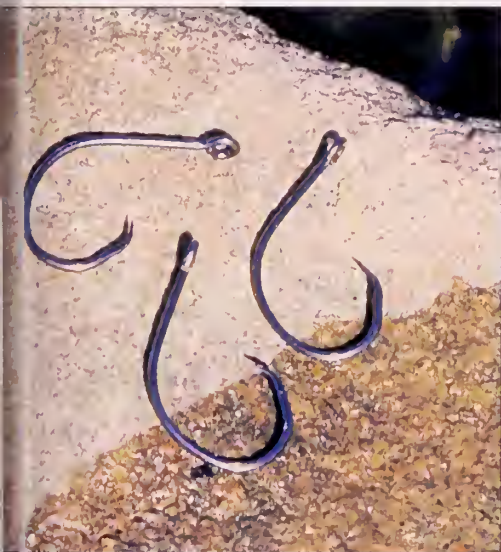
## Scales and Nets:

Most saltwater species can handle being netted and released without harm, but for more fragile freshwater species, nets can be very damaging. Whenever possible don't use them. But if you are using nets, shallow rubber nets do the least amount of damage. Tying a knot in a mesh net can also keep a fish from getting tangled up, making it easier to get them out quickly.

Many anglers carry scales to weigh their fish before letting them go. The "gripper" type scales do the least harm to fish. Try to weigh the fish over the water so that if they flop off the scale they don't fall on the bottom of the boat.

## Wet Your Hands:

All fish have a protective layer of slime or mucous that covers their body called the epithelium. The epithelium, much like the mucous membrane in our nose and mouth, acts to help fight off disease, the only difference being that it is exposed. Whether a net, gloves, a towel or bare hands, make sure whatever comes into contact with the fish is wet or at least moist. This greatly reduces the risk of stripping the fish's epithelium and the subsequent risk of disease.



*Above: Circle hooks or hooks without barbs make for much easier and quicker releases. Upper right: If you have to handle a fish by the lip make sure that the body remains vertical, as not to damage the jaw. Right: The best way to get water moving through a fish's gills is to hold them by the bottom lip and their mouth slightly ajar and move them in a figure eight motion or hold them facing into the current in moving water.*

## Time of Year:

Chris Dahlem, the superintendent of the King and Queen Fish Hatchery says, "water temperature is the number one consideration" when releasing fish. This mostly applies to the summer when water temperatures in freshwater ponds, lakes, and





## Revival:

After a tough fight or during a particularly stressful time of year like mid summer, fish will often need a little boost of oxygen before they go. A common misconception, and one we see played out far too often on TV, is that we should move the fish back and forth to get water moving over their gills. "Gill filaments are made to have water moving over them in one direction only. They are like bags of liquid that contain blood, and when water moves over them in the wrong direction it damages them," says Chris Dahlem. The best way to get water moving through a fish's gills is to hold them by the bottom lip with their mouth slightly ajar and move them in a figure eight motion or hold them facing into the current in moving water. For bigger, saltwater species, putting the boat in gear and holding the fish over the side and facing forward will get water moving over their gills in the right direction.

No matter what happens, there will always be a certain faction that will never truly understand catch-and-release fishing. My mother-in-law is a member of that faction, but I think she is slowly starting to come around. Since I've been married these last several years, my wife and I have gotten in the habit of eating at her parent's house on Sunday nights. If I get a chance to fish it's usually on Sundays, so often I come rolling in to dinner smelling like cutbait and crickets. In two years I haven't brought home one fish for us to eat, and the conversation is always the same when I arrive.

"Catch anything?" my mother-in-law asks.

"Yeah," I reply.

"Where are they then?"

"Let them all go."

"Uhhhh huhhhh," she says, looking at me sideways while reaching to take dinner out of the oven. I get the feeling she doesn't believe me. □

---

*Tee Clarkson is an English teacher and in his spare time runs Virginia Fishing Adventures, a fishing camp for kids. For more information you can contact Tee at: [tclarkson@virginiafishingadventures.com](mailto:tclarkson@virginiafishingadventures.com).*



*If you're not going to eat your catch then practice catch and release. This way fish will have a chance to grow and you will offer others the same angling fun and experience.*





# 2005 Angler of the Year

Species Size	Angler's Name/Home	Body of Water	Date
Largemouth Bass, 14 lbs. 3 oz., 27 3/4"	Jason Jennings, Brookneal, VA	Lake Conner	06/25/2005
Smallmouth Bass, 6 lbs. 11 oz., 22"	N. Scott Meyerhoffer, Midlothian, VA	New River	04/10/2005
Crappie, 4 lbs. 4 oz., 21"	Phillip Roark, Gretna, VA	Private Pond	03/18/2005
Rock Bass, 2 lbs. 9 oz.	Harry Swauger, III, Yorktown, VA	Western Branch Reservoir	05/28/2005
Sunfish, 2 lbs. 8 oz., 13 1/2"	Mark Joyce, Norfolk, VA	Western Branch Reservoir	05/18/2005
Sunfish, 2 lbs. 8 oz., 12 1/4"	Ryan Edwards, Hampton, VA	Lake Prince	06/19/2005
White Bass, 4 lbs. 2 oz., 20"	Donald Taylor, Marion, VA	South Holston Reservoir	04/11/2005
Striped Bass, 30 lbs. 12 oz., 39"	Samuel Bostwick, Jr., Blacksburg, VA	Claytor Lake	03/06/2005
White Perch, 2 lbs.	L. A. Roberts, Richmond, VA	Private Pond	11/12/2005
Channel Catfish, 28 lbs., 38"	Michael Fletcher, Richmond, VA	Mattaponi River	11/08/2005
Blue Catfish, 78 lbs., 48"	Fred Helms, Woolwine, VA	James River	08/12/2005
Flathead Catfish, 51 lbs. 3 oz., 43"	John Epps, Jr., Sutherlin, VA	Staunton River	06/04/2005
Rainbow Trout, 15 lbs. 8 oz., 31"	Lawrence Warden, Yadkinville, NC	Private Pond	04/24/2005
Brook Trout, 6 lbs. 3 oz., 20 3/4"	Lewis Chastain, Staunton, VA	Cripple Creek	04/14/2005
Brown Trout, 14 lbs., 2 oz., 29"	Aaron Propps, Covington, VA	Dunlap Creek	04/18/2005
Chain Pickerel, 5 lbs. 14 oz., 27 1/2"	Glenn Williams, Millboro, VA	Lake Moomaw	02/22/2005
Muskellunge, 27 lbs. 12 oz., 49 3/4"	Frederick Huff, Blacksburg, VA	New River	08/18/2005
Northern Pike, 15 lbs., 37"	James Mize, Stoneville, NC	Martinsville Reservoir	10/02/2005
Walleye, 13 lbs. 7 oz., 33 1/4"	Victor Billings, Hillsville, VA	New River	10/30/2005
Yellow Perch, 2 lbs., 12 1/2"	David Stacy, Sandston, VA	Little Creek Reservoir	04/06/2005
Gar, 17 lbs. 9 oz., 47 3/4"	Jimmy Eppley, Redhouse, VA	Staunton River	07/03/2005
Bowfin, 12 lbs. 5 oz., 33 1/4"	Joshua Meade, Fredericksburg, VA	Mattaponi River	06/28/2005
Carp, 58 lbs., 43 1/2"	Harold Wells, Jr., Staunton, VA	North River	11/07/2005

**Please Note:** For record keeping purposes, please report any errors on your Trophy Fish Awards. If you discover an error, please contact the Virginia Angler Recognition Program at 804-367-1293 or write to: VARP, 4010 W. Broad St. Richmond, VA 23230. You can find all you need to know about the Trophy Fish Program at [www.dgif.virginia.gov](http://www.dgif.virginia.gov).



# 2005 Angler



**T**he Virginia Department of Game and Inland Fisheries' Hall of Fame list is a compilation of all the freshwater anglers who qualified for advanced awards in the Angler Recognition Program.

To achieve the status of Master Angler I, five trophy fish of different species must be caught and registered with the Virginia Angler Recognition Program. For Master II, 10 trophy fish of different species must be caught, and so on for the Master III or IV level. Expert anglers must catch and register 10 trophy fish of the same species.

Each angler that accomplishes this feat receives a Master Angler or Expert Angler certificate and patch. Expert patches include the species on the patch. There is no fee or application for Master or Expert.

If you have records prior to 1995 and believe you may have obtained this angling status, please call the Virginia Angler Recognition Program at (804) 367-8916 to have your records checked.

The Creel-of-the-Year Award recognizes the angler who accounts for the most trophy-size fish caught and registered in the Angler Recognition Program from January 1 through December 31, annually.

## MASTER ANGLER I

Joshua Akers  
L. Travis Ayers  
Bradley Baker  
James Baker, Jr.  
David Bates, Sr.  
Michael Belcher, Sr.  
Steven Bowling

Wayne Bowman  
Wade Brooks  
Larry Brown  
Charles Byrum  
Thomas Byrum, Jr.  
Robert Cameron, Sr.  
Alan Campbell  
Kevin Carr  
Michael Chaney  
Christopher Chittum  
James Clifton, Jr.  
Alan Cochran  
Thomas D. Compton  
Timothy Compton  
Darrell Cox  
Walter Crouch, Jr.  
Richard Curtis  
Jody Cussins  
James Davis  
Ronnie Davis  
Paul Doughton  
Matthew Easterbrook  
Charles Edwards  
Norman English  
David Forbes  
Robert Foster  
Timothy Garwood  
Terry Gusler  
Kenneth Helbert  
Michael Horgan  
Amos Horst  
Lois Horst  
Elizabeth Huffines  
Ryan Ketcham  
Ronnie Loker  
Benjamin Looney  
Ronald Marrin, Jr.  
John Miklandric  
Billy Mills  
Brooks Noble  
Gary Owens  
Thomas Pitts, III  
Calvin Leon Plaster  
Ronald Powell  
Capt. Forest Pressnell  
Bobby Price  
Aaron Propps  
Carl Quast  
Ronald Rauanheimo  
Justin Reed  
Carl Reynolds  
L. A. Roberts

Melvin Rose  
Vernon Sanford, Jr.  
Michael Schools, Sr.  
Alfred Scott  
Dwight Setliff, Sr.  
Donald Sheets  
Jeffrey Shell  
Darrien Simpkins  
Patrick Smith, Sr.  
Ronald Strickler  
James Taylor  
Harold Vaughan  
Robert Walton, Jr.  
Justin Witten  
Richard Woodfin, III  
Kayleigh Wright

## MASTER ANGLER II

Dennis Baines  
Jeffrey Carney  
Kenneth Dalton  
Ronnie Davis  
Jimmy Eppley  
James Gray, Jr.  
William Hall, IV  
Daniel Leibfreid  
Russell McDonald, Jr.  
Todd Pickett  
Michael Vaughan  
William Weber  
Keith Williams

## MASTER ANGLER III

Tommy Dooley  
Carl Knauer

## EXPERTS

### Largemouth Bass

Linwood Allison  
Gilbert Bartle  
Jessie Daniel  
Thomas Davis  
Michael Davis  
Doug Deagle  
Paul DiMeglio  
Tommy Dooley  
Cecil Gregory, Jr.  
Curtis Hall  
Alfred Haynes  
Roland Horst



# Hall of Fame

Gregory Ingold  
Alan Keane  
Perry Saulnier  
Darwin Schaeffer  
Larry Stephens  
George Townsend, III  
Earlie Worrell

## **Smallmouth Bass**

John Osborne, Jr.  
Britt Stoudenmire

## **Crappie**

Brian Atkins  
Kenneth Helbert  
Stephen Miklandric  
Richard Rose

## **Rock Bass**

Conner Harrison  
Stanley Winfield, III

## **Sunfish**

Michael Brown  
Julius DeBose  
Windell Doyle  
Rebecca Henry  
Billie Overton  
Ronald Powell  
Justin Winther

## **Striped Bass**

William Anvender  
Alan McDilda

## **White Perch**

Tommy Dooley  
Earlie Worrell

## **Blue Catfish**

James Atkins, III  
Kent Bennett  
Christopher Bookout  
Thomas Carter  
Robert Edwards  
Craig Eppard  
Brenda Felts  
Joshua Fitchett  
Kyle Henshaw  
Kenneth Keesecker

Tripp Lightner, III  
Brian Moore, Jr.  
James Reed  
Phillip Sanford  
Michael Shifflett  
Dale Thomas  
John Hunter Williams, IV  
Roger Yancey  
Arthur Young, Jr.  
William Zost

## **Flathead Catfish**

William Kirkland, Sr.  
William Mason  
James Mayhew

## **Rainbow Trout**

Scott Allen  
Malcolm Ayers  
Bill Barnes  
Michael Bryant  
Daniel Carr, Jr.  
Michael Carrier  
Lewis Chastain  
Greg Clark  
Barry Doss  
Windell Doyle  
Danny Dugan  
Charles Grant  
Michael Griffin  
Frederick Huff  
Robert Hurt  
Larry Lambert, Jr.  
Larry Lambert, Sr.  
Danny Marshall  
Joseph Mitchell  
Scotty O'Quinn  
Calvin Leon Plaster  
Aaron Propps  
Gary Stone  
Ray Turpin, Jr.  
Craig Wolfe  
Mark Woodson

## **Brook Trout**

Andrew Bower  
Lewis Chastain  
Bert Denny  
William Denny, Jr.  
Donald Dorsey  
James Ferguson, Sr.

Michael Hatcher  
Zachary Hines  
Larry Lambert, Jr.  
Larry Lambert, Sr.  
Glenn Perkins, Jr.  
Carl Reynolds  
Craig Russell  
Eric Sadler  
Gary Stone  
Lee Stover  
Robert Stover, Sr.  
Michael Strickland, Jr.  
Ray Turpin, Jr.

## **Chain Pickerel**

Mark Fimian

## **Muskellunge**

Jeffrey Conley  
Cliff Songer

## **Yellow Perch**

Kenneth Ames, Sr.  
James Bethea  
Roger Brown  
Michael Campbell  
Gerald Gorde  
Michael Hardbower  
Lewis Hardbower, III  
Christopher Howell  
Larry Richardson  
Bill Schieman  
David Stacy  
Kenneth Swecker, Jr.  
Larry Wells  
Richard Wolfe

## **Gar**

Stephen Batchelder  
John Overton, Jr.

## **Carp**

Theodore Kesler

## **CREEL OF THE YEAR**

Will Helmick (139) –  
Rainbow Trout (38),  
Brook Trout (95), Brown Trout (6)





# Journal

## 2006 Outdoor Calendar of Events

**July 7-9:** *Virginia Outdoor Weekend* at Twin Lakes State Park in Green Bay in Prince Edward County. For more information call 804-367-0656.

**July 25:** *Saltwater Fishing Workshop* at Smith Point Marina in Northumberland County. For more information call 804-367-6778.

**August 2:** *Flat Out Catfishing Clinic* on James River, Richmond. For more information call 804-367-6778.

**August 18-20:** *Mother Daughter Outdoors* at Holiday Lake 4-H Educational Center in Appomattox. For more information call 804-367-0656.



### With the Greatest of Ease!

by Jennifer Worrell

It goes without saying that all law enforcement officers must be in great physical shape, but sometimes game wardens can use a bit of gymnastic ability as well. B.I. Bell of Williamsburg/James City County and Jeff McCuiston of Mathews were on boat patrol together and were randomly checking boaters for safety equipment and fishing licenses. As they pulled up near one errant fisherman, Bell could see the man frantically taking fish from his cooler and throwing them overboard. As McCuiston carefully maneuvered

their vessel closer, Bell knew all the evidence of the man's illegal fishing would soon be gone. Without thinking, Bell jumped to the gunwhales of his moving boat, took a gigantic leap over the open water, and landed in the violator's vessel just in time to save the last of the undersized fish. In addition to successfully enforcing fishing laws that day, Bell emphasizes that he landed in the craft on both feet.



by Beth Hester

*The Best of Virginia Farms*  
by CiCi Williamson  
2003 CI Publishing and Menasha Press  
ISBN: 0-89732-416-1  
Hardcover with illustrations

Virginia has a rich agricultural heritage, and Ci Ci Williamson's *The Best of Virginia Farms* is a substantial, 307 page celebration of our state's bounty. In fact, farms cover approximately 34 percent of Virginia's total land area. Of course, Virginia's bounty includes game, both wild and farm-raised, as well as the gifts of our inland and coastal waters.

Ms. Williamson who wrote for a number of Virginia newspapers before turning to book writing full-time, has produced an heirloom volume, each chapter bursting with recipes, essays, maps, food lore and regional food profiles.

For example, the Game chapter, features recipes for bison, rabbit and venison, providing the hungry reader with "Basic Bison Cooking Tips". The Shellfish section gives the intrepid cook instructions on the best way to clean a squid, and includes a short essay about the Chesapeake Bay. Within the chapters are full color, fold-out regional photographs.

More than a cookbook, it can also be put to good use as a tour guide to historic sites of agricultural interest, from The Museum of American Frontier Culture near Staunton, to the Crab Orchard Museum and Pioneer Park. And for those of you who enjoy a bit of the grape with your meals, there is ample information on Virginia wineries. At \$24.95, *The Best of Virginia Farms* is a real bargain, and would make a perfect gift.

*The Browning Superposed: John M. Browning's Last Legacy*  
by Ned Schwing  
1996 Krause Publications  
Hardcover  
ISBN: 0-87341-350-4

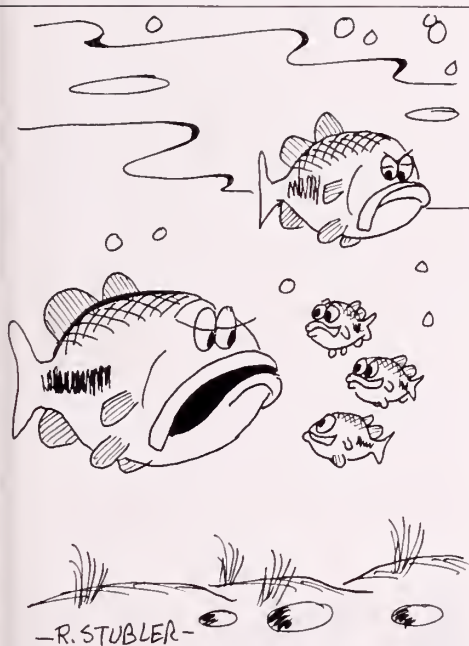
The famed Browning Superposed was the best-selling over and under shotgun in North America. I became interested in learning more about the history of this model after purchasing a 12 gauge Superposed at an estate sale. I plunked down a hefty sum for *The Browning Superposed: John M. Browning's Last Legacy*, and never looked back. Author and military historian Ned Schwing chronicles the birth and evolution of this classic firearm from 1926 to 1995. Along with lavish color illustrations, sales statistics, patent diagrams and engraving details, there are facts to help interpret the varying Browning/Fabrique Nationale serial number configurations. Also useful are descriptions of the modifications that



were made to the Superposed during the 1960's.

Interestingly enough, the Superposed was conceived for two primary reasons: John Browning was afraid that growing protest about repeating guns might legislate him out of existence. Browning also wanted to provide the American hunter and target shooter with a reasonably priced, high quality double gun sporting an efficient, single sighting plane.

Through the story of a lone shotgun, a fascinating tale of fine craftsmanship and innovation, war and economic strategy unfolds. The mistakes as well as the triumphs are included. This is a very classy book about a very classy shotgun. □



"Now if you'll be real good Daddy will tell you a fish story"

## VOWA Announces 2005 Awards

by Marika Byrd

At its recent annual meeting, the Virginia Outdoor Writers Association, Inc., (VOWA) recognized outstanding writing by its members, the first annual Undergraduate Writing Award and the Youth Writing

Awards. Information on all winners listed below is listed in the first, second and third place rankings.

Two of the categories garnered winners this year for VOWA Excellence-in-Craft for members. The Bob Gooch Outdoor Column was renamed earlier this year. Gooch died recently and did not get to meet the winners of the first contest in his honor.

**Bob Gooch Outdoor Column:** Mark Fike, won with "Two Girls Chasing a Butterfly in a Canoe," in *The Journal* papers; Nancy Sorrells, authored "Geological, Botanical Oddity Worth the Trip," in the *Staunton Daily News-Leader*, and Ken Perrotte, told about "Outdoors Experiences Can Bring Together Generations" in the *Fredericksburg Free Lance-Star*.

**Feature Article:** Allan Gregory won for "Dismal Science" in the *Bristol Herald Courier*; Dan Genest scored with "Smith River Browns," in *Fly Fish America*, and Ken Perrotte penned "An Answered Prayer," in *Virginia Wildlife*.

VOWA initiated an annual **Undergraduate Writing** competition for 2005. The first winner was Tia Currier, English major and junior at James Madison University, as well as VOWA's first student member. Her story follows this article.

**The 2005 Youth Writing** contest garnered an astonishing 187 entries. Much credit for this goes to Jim Firebaugh, of the Virginia Department of Education, as well as the English and science teachers he notified. Their action kept the judges very busy sorting and selecting a winner.

In the Youth Writing category, Charlotte Seid, a senior won with "Changing Seasons." Her article also follows.

Leo Brett, who won second place, describes an eventful fishing trip on the Potomac River which resulted in the boat becoming upside down on the river bottom. They did catch some fish.

Third place went to Jacob Woodward, a home schooled, ninth grader. Jacob and his father went hunting, but the highlight of the day was a squirrel-grouse fight right before

their eyes. Forget about the hunt, the entertainment was more exciting.

Check VOWA's Web site at [www.vowa.org](http://www.vowa.org) later this summer and read the other winning entries and obtain full guidelines for this year's contest.

Youth Writing Contest guidelines:

1. Open to all Virginia students in grades 9 through 12.
2. Nonfiction only, with the theme "My Most Memorable Outdoor Experience."
3. Length: 500-750 words; must be typed, double-spaced.
4. Electronic submissions are encouraged; send as a Word or text attachment.
5. Include age, grade and school; home schooled are welcome.
6. Include complete mailing address, an evening telephone number, e-mail address, if available (for correspondence purposes only).

## How Experiences in the Outdoors Have Driven My Career Choice

by Tia Currier

Throughout my life, I have honed my skills as an outdoorsman and spent as much time as possible becoming one with the wilderness. To be frank, I am the outdoors. It was destiny from birth that I take this path and I made up my mind early that I would hunt and fish my way through life. Nothing would stop me either, as long as I learned as much as possible and stayed dedicated to the outdoors.

I determined at age three that I must get a head start on my peers if I were to out-bass-fish them. After comparing several types of softbaits while my mother shopped for less important things, like socks, at our local K-mart, I decided on worms that should work quite well in local waters. I reasoned that their pink tails would be bright enough to attract a three to five pound bass in a primarily milfoil habitat. I begged for them for weeks, until I stumbled upon





them under the Christmas tree. I finally had the tools, now all I needed was a grown-up to help me cross the street so I could go down to the lake.

The impressive bass fishing knowledge didn't stop there. No, I refined my lure selection, presentation, and casting into my teen years, when I became an avid smallmouth fisherman. I had learned which lures looked like a steakhouse meal to them; it was just a matter of when they'd bite. And as soon as one would nibble—I'd yank that lure so fast and hard it would come right out of their mouth. When I said I had refined my skills, I didn't mention I had been diagnosed with premature

hook-set disease. It's a painful ailment really, one I've been fighting for years. Unfortunately, it carried over into my fly-fishing as well.

But the disease is the least of my worries when I have a fly rod in my hand. Every time I step onto a stream bank, it's like going to war. I always stock up on ammunition. I'll tie 10 flies for everyman's one because I am anticipating the attack of tall grass or trees entering my back cast area. And it seems like I always have a rod "incident" too. Either an abnormally large trout takes off with the entire rod, or the disease fires up again and I snap off a rod tip. Naturally, I have to have a backup rod or two. Well, really



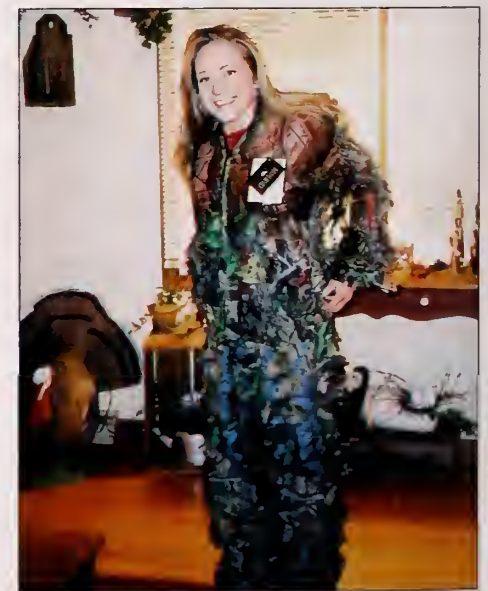
*First place winner of the 2005 Virginia Outdoors Writers Association's Undergraduate Writing contest, Tia Currier, has had a love of the outdoors since she was "knee high to a grasshopper." When other girls her age were playing with Barbie Dolls or looking for that perfect dress at the Gap, Tia was testing her angling skills and setting sights on her next hunting adventure.*

they've grown to fill a golf bag. My caddy says it's getting a little heavy, but I say the fish are getting stronger.

Fishing isn't the only time I need to be prepared. I'm always sure to bring along a quiver of a minimum of two dozen arrows on any given bowhunt. At least two arrows usually fall out of the quiver as I pull my bow up to my treestand. Provided I

actually have a nice deer come within bow range, the first shot tends to come up short. If I get a second shot, it's usually high. And if the little sucker sticks around to taunt me, I just start chucking arrows toward it in a fit of rage. Then I only have one left. Of course, that's when the elusive twelve-pointer steps out from the brush and puts the pressure on me. Did I mention I have lock-up disease when I hunt? That's when the pressure of a necessary shot sets in and my body seizes. My mind is communicating to my limbs, but my limbs don't respond.

Don't pity me because of my lock-up disease though; pity the wildlife that have caused the illness. See, I've been undergoing therapy—in the form of bird hunting—and intend to get redemption. Because of its fast-paced nature and need for cat-like reflexes, bird hunting doesn't even give me the chance to lock up. And to help the cause, I started training a young Labrador retriever. It's a peculiar thing though. One brisk morning, while fetching a downed bird for me, my lab just kept running. He ran far past the bird, as if it wasn't even there, and didn't respond to any call or whistle. I honestly believe he ran away from home. My caddy says the 5:30 a.m. physical training sessions and my obsession with fetch drills might have driven him to leave. I say every good hunter needs to be dedicated.





That dedication has led me right to where I am today too. No matter how many times I miss my target, how many flies I lose, or how many times my diseases rear their ugly heads, I still love the outdoors. So, as I work my way through college, and am faced with a career decision, I really have no choice. I am the outdoors. Without wilderness and wildlife I couldn't be satisfied with life. And so long as these crazy things keep happening to me while I'm out there, and other people would like to read about them, that's what I'll be; an outdoor writer. □

*Tia Currier is a 20 year old junior at James Madison University, majoring in English.*

## Changing Seasons

by Charlotte Seid

I pause under a small bridge, far from the sounds and rush of suburban traffic. A low whisper, faint as the rustle of leaves, guides me down a familiar, earthy path to the stream valley. Here, only a mile from my home but worlds away from the cares of civilization, I have come to my neighboring stream, Cub Run.

The surrounding hills, densely forested with yellow maples, form a shaded valley that follow the water's meandering course. The tannin-stained flow drips over a small waterfall to the sandy bed, whose bottom is scattered with slick cobbles. Brown and golden leaves accumulate in the riffles, while fresh foliage drifts from the trees above. Above, me, autumn sunlight filters through the leafy canopy and dances in patterns of liquid light below. Except for the hushed trickle of the stream, the landscape is nearly silent.

In rubber boots, I wade into the stream carrying a tall net with two poles. I have come to monitor the stream by sampling its macroinvertebrates, the tiny insect larvae and crustaceans that live below its rippling surface.

Once, as a timid 12-year-old, I was introduced to stream monitoring at a training workshop. I recall the fascination of that first day, when I

encountered waders, microscopes, and the tall seine that scooped up dozens of miniature creatures from the streambed. Friendly naturalists, watershed specialists, and biologists had patiently explained how those invertebrates are indicators of water quality; by simply identifying and tallying the "steam bugs," our country's scientists can determine the ecological condition of a stream and encourage policymakers to protect it.

Now, five years and countless training sessions later, I am the founder of my own stream monitoring site. Expertly wielding my net, I plant the poles across the stream, dip my hands into the cool water, and gently rub the rocks to dislodge the tiny, clinging creatures that make this place their home. A minute later, I lift the dripping net, full of leaves and pebbles, onto the bank. Although the spread initially looks devoid of life, I soon detect the subtle wriggling of the stream insects. Here, a shiny black riffle beetle. There, a graceful, long-legged damselfly nymph. With forceps, I carefully transfer the squirming creatures to a water-filled tray, where they are identified, tallied, and safely returned to their rocky homes.

A few quick calculations bring me encouraging news; my stream site has an ecological score of seven, in the category of "acceptable." And I hope it will stay this way for many years.

As I rinse my net and replace the rocks I have overturned, the yellow leaves continue to flutter past me. I realize that, like the leaves, I am now older and more mature, experienced and wise from my years of training. I have taken confident flight from the mentors and volunteers who trained me, and I am ready to begin my own journey of conservation, surely to teach and inspire others. These leaves, after a summer of growing, are drifting down the clear, steady current of Cub Run. And I, about to graduate and leave the community that has nourished me, am about to ride along the flow of the future. □

*Charlotte Seid is senior at Thomas Jefferson High School for Science and Technology.*

## Nongame Tax Checkoff Program

Celebrate the 25th Anniversary of Virginia's Nongame Wildlife Program by helping to support essential research and management of Virginia's native birds, fish and other nongame animals.

If you would like to make a cash donation directly to the Virginia Nongame Wildlife Program using a VISA or MasterCard, you can visit the Department's Web site for more information or mail a check made out to: Virginia Nongame Program and mail it to Virginia Nongame Program, 4010 W. Broad St., Richmond, VA 23230-1104.

Remember, that this is your chance to help with the management of Virginia's wildlife. □



## Free Freshwater Fishing Days

Never fished, but always wanted to give it a try. Know someone who would like to go fishing, but never got around to purchasing a license. Here's your chance to wet a line for free and find out why fishing is one of the most popular outdoor activities in the country. June 2, 3 and 4, 2006, have been designated Free Freshwater Fishing Days in Virginia. No fishing license of any kind will be required for rod and reel fishing in freshwater; except in designated stocked trout waters. □



# OUTDOOR CATALOG

## Summer Sizzler



### 2006 Limited Edition Virginia Wildlife Collector's Knife

This year's knife has been customized for us by Buck Knives. Each knife is individually serial numbered, and comes with a distinctive rosewood handle and gold lettering. This year's knife also includes two white-tailed deer etched on the blade. This custom knife not only comes with a leather sheath, but also a custom made solid, cherry box with a decorative wildlife scene engraved on the cover.

Item #VW-406 \$85.00 each



# VW-503



# VW-502

### Buckles

Our bass and duck belt buckle collection is crafted of solid pewter with Virginia Wildlife engraved at the bottom. Each buckle comes in a custom gift box with the VDGI distinctive logo displayed.

~~\$9.95~~ each

Item #VW-502 Bass VW-503 Duck  
NOW \$5.00 each



### 2005 Limited Edition Collector's Plate and Stein

This collectable is titled "Cardinal in the Pines" and was taken from an award winning photo by Douglas Graham. Each plate and stein is individually serial numbered and has the year of issue identified on the back.

Plate ~~\$22.95~~  
Stein ~~\$16.95~~

Item #VW-5200 NOW \$29.00 for pair



### Limited Edition Collector's Plate and Stein

This collectable is titled "Winter Comfort" and is taken from an original painting by Bob Henley. Each plate and stein is individually serial numbered and has the year of issue on the back.

Plate ~~\$22.95~~  
Stein ~~\$16.95~~

Item #VW-5000 NOW \$29.00 for pair

### Our Virginia Wildlife collection of Pulsar Watches by Seiko



From the Ladies Pulsar collection. This attractive watch has a gold tone bracelet with gold tone hands and markers on a champagne dial. Water resistant.

~~\$59.00~~ each

Item #VW-302  
NOW \$39.00 each



From the Pulsar Nightfall Line. TiCN plating, gold tone crown, hands and markers and black dial. Water resistant.

~~\$59.00~~ each

Item #VW-301  
NOW \$39.00 each

### To Order

Visit the Department's  
Web Site at:

[www.dgif.virginia.gov](http://www.dgif.virginia.gov)

Or Call (804) 367-2569

Please allow 3 to 4 weeks for delivery.



# Photo Tips



by Lynda Richardson

## What the Heck is a Pixel?

When you look at a digital photograph, it appears smooth and continuous just like a regular film based photograph. What you don't see are the millions of tiny squares of color that make up a digital photograph. These squares are called pixels.

A pixel, or picture element, is a square of color containing photosites which collect color information about an image. Each pixel contains three color channels; red, green and blue and each one of these color channels has a numerical value between 0 and 255. There are over 16 million color

You are invited to submit one to five of your best photographs to "Image of the Month:" *Virginia Wildlife Magazine*, P.O. Box 11104, 4010 West Broad Street, Richmond, VA 23230-1104. Send original slides, high quality prints, or high res jpeg files on disk and include a self addressed, stamped envelope or other shipping method for return. Also, please include any pertinent information regarding how and where you captured the images and what camera and settings you used. We look forward to seeing and sharing your work with the readers of *Virginia Wildlife* magazine!



©Lynda Richardson



©Lynda Richardson

You can't really see any pixels in this digitally shot image of a gray tree frog but if I enlarge his eye (above) the pixels are quite obvious. See how the pixels are small, individually colored squares.

combinations in this scheme, each one representing a different color. The more pixels in a digital image, the more color, detail and sharpness there is in that image.

When a digital photograph is taken, light is captured by the digital camera's image sensor and converted into pixels. When an image is transferred into a computer, the pixels are then mapped out on a grid based on the color and brightness values of each pixel.

If you enlarge a digital photograph too much, you may begin to see the individual pixels making up that image. This is called "pixelation." Cameras with high pixel (megapixel) counts usually capture the best quality photographs and are less likely to pixelate depending on how much you enlarge those images.

Now that you understand what a pixel is, in my next column we will talk about how megapixels relate to digital cameras and print sizes and what that means to your photography. Until then, Happy Shooting!

## Image of the Month



Congratulations go to Carmen J. Shortt of Richmond, for her lovely photograph of an inviting spot on Dyer Creek in Apple Grove Cove in Lancaster County. Photographed one morning in late September, just after sunrise, Carmen used a Canon SureShot camera and Kodak 400 speed print film to capture this tranquil moment.



# On The Water

by Jim Crosby



## Boat Battery Power

**I**f you only use a muscle-powered vessel, you can skip reading this column for this month. However, if you power your boat with anything other than a sail, you will learn something from my research on the subject of boat battery power.

Electrical storage batteries are a mystery to most boaters and many motor vehicle owners for that matter. Usually, our first lesson comes when we turn on the key and expect to hear that surge of power that starts your engine and you only hear the key click, or at the most, a stutter from the starter motor. From that point forward, most operators must rely on someone else to save their day, and that is not a desirable position to find one's self.

A battery is a reservoir of electrical energy stored for use at a later time. Just like a bucket of water, you can only take out that which has been put in previously.

What many boaters don't know is that batteries come in many different configurations and with different chemistry. Their use should contribute to the decision of which is best for any given application.

Today, we have starting batteries, deep cycle batteries and dual-purpose batteries from which to choose. Beyond that, we have three different types of chemistry from which to select. We have wet cell, gel cell and AGM (absorbed Glass Mat) cell batteries available.

Walking into a big-box store today to pick up a boat battery, you will find that the dual-purpose, wet cell is the most common to be found. If there is a decision to be made, it will usually be limited to whether or not you need a starting battery or a deep-cycle battery. If you have an electric motor on your boat, the deep cycle battery is the only choice you should make. If you have a

petroleum-fueled engine, you will need a starting battery. If you also run radios, lights, computers, etc. while the engine is turned off, you will need a dual-purpose battery. If you are starting a small, four-cylinder engine, one with less cold-cranking amps will serve very well. If you are starting a large engine, you will need one with a lot of cold-cranking amps. In some boats, you will find the factory has installed two or three batteries and they may be divided between starting and deep cycle. Multiple batteries usually means you have a battery switch which can connect all of them in parallel to still deliver only 12-volts, or individually, or totally disconnected. The latter is a good idea when storing your boat on shore so the batteries will not be drained by something inadvertently left turned on, however it is not a good idea when storing your boat in the water because it may turn off your bilge pump which will be required to pump out the rain water that might collect there during your absence. For this reason, I suggest bilge pumps be wired direct to your deep cycle battery so they can never be turned off—afloat or ashore. Rainwater can sink your boat or blow your trailer tires if left to collect uninhibited.

Now, let's talk about chemistry. The wet cell battery is by far the most common and is the most economical battery one can buy. Its disadvantages are that it expels explosive gas, violent shaking and vibration damage its plates, and the sulfuric acid is destructive and dangerous when spilled.

The gel cell battery is a step up from the wet cell in price and safety. It does not contain a liquid that can be spilled and cannot expel gas during the recharging mode because it is totally sealed.

The AGM battery is the best available at this time and the most expensive. High-density AGM batteries have lower internal resistance, allowing greater starting power and charge acceptance that means quicker recharging than other types of deep cycle batteries. Long life, a low 3 percent self-discharge rate and outstanding performance make AGM batteries excellent dual-purpose batteries for boaters who require quick starting power and reliable deep cycle ability.

As with many things in life, you get what you pay for in batteries.

I would also like to list some tips for best battery performance and safety:

- ◆ Only use one type of battery chemistry because mixing them can shorten the life of all your batteries.
- ◆ Replace all batteries in one bank at the same time. Weak batteries tend to pull the new ones down to their deteriorated level.
- ◆ Keep batteries clean, cool, dry and covered to prevent shorts that could cause an explosion.
- ◆ Keep terminal connectors clean and tight to increase conductivity. Clean them with a paste of baking soda and water.
- ◆ Use only distilled water in wet cell batteries to maintain the liquid level. Rainwater is a good source.
- ◆ Keep batteries charged especially in winter because a discharged battery will freeze and burst. A discharged battery left for a period of time will lose its ability to hold a charge in the future. □

*Author's Note: I always welcome feedback, input and/or suggestions from readers. My email address is: [jimcrosby@adelphia.net](mailto:jimcrosby@adelphia.net)*



# RECIPES

by Joan Cone

## Let's Eat More Tilapia and Catfish

**W**hile there is a world wide shortage of seafood, the price of some species has remained stable. In salt-water, salmon and shrimp are two examples, and these are being farm raised in such places as Chile and Thailand respectively.

Closer to home, we can purchase farm raised trout, catfish and tilapia. Tilapia is the sixth most popular consumed fish in the United States. It, like catfish, is mild tasting and lean with a slightly firm texture. A four ounce tilapia fillet contains only 93 calories, one gram of fat, 21 grams of protein and 90 milligrams of omega-3 fatty acids.

All three of these freshwater fish can be purchased at major supermarkets, Costco and Sam's Club.

### Menu

Crispy Curried Fish Fillets  
Puffed Potato Casserole  
Tomato And Green Bean Salad  
Fresh Blueberry Pie

### Crispy Curried Fish Fillets

1 1/2 to 2 pounds skinless tilapia or catfish fillets  
1 tablespoon vinegar  
Salt and ground pepper to taste  
1 teaspoon ground turmeric  
2 teaspoons curry powder  
Cayenne pepper to taste, if desired  
Peanut or vegetable oil, as needed for frying  
2 cups flour  
Lime wedges

Heat oven to 200° F. Place an ovenproof platter in it. Toss fish with vinegar. Combine salt, pepper, turmeric, curry powder and cayenne pepper in a small bowl. Rub this mixture onto both sides of each fillet. Pour at least 1/8-inch oil into a large nonstick skillet and turn heat to medium-high. Combine flour with enough warm water to make a batter about as thick as yogurt. Test oil to see it is hot enough (a pinch of flour will sizzle in it). Turn heat to high. Dunk fillets into batter one at a time, letting excess batter run off. Then place fish in pan without overcrowding it. Fry fish, rotating as necessary so fillets brown evenly. Remove fish when golden and crisp on each side, 5 to 8 minutes. Keep warm on platter in oven while you cook remaining fillets. Makes 4 to 5 servings.

### Puffed Potato Casserole

1 1/2 cups water  
Salt to taste  
2 tablespoons butter or margarine  
1/2 cup milk  
1 1/2 cups mashed potato flakes

1/2 teaspoon dried dill weed  
3 eggs, separated  
1/2 cup grated parmesan cheese  
1/4 teaspoon cream of tartar

Preheat oven to 325° F. Grease bottom only of 1 1/2 or 2-quart round casserole. In medium saucepan, bring 1 1/2 cups water, salt and butter to a rolling boil. Remove from heat. Stir in milk, potato flakes and dill weed. Beat in egg yolks. Stir in cheese. In medium bowl, beat egg whites and cream of tartar until stiff peaks form. Carefully fold egg whites evenly into potato mixture. Turn mixture into prepared casserole. Bake at 325° F. for 55 to 60 minutes or until knife inserted in center comes out clean. Serve immediately as casserole will collapse as it cools. Makes 4 to 6 servings.

### Tomato and Green Bean Salad

1 1/2 cups cherry tomatoes, halved lengthwise  
1 1/2 cups yellow pear or cherry tomatoes, halved lengthwise  
2 large ripe tomatoes, halved lengthwise and cut into very thin wedges  
1 cup tender green beans, cut into 1-inch pieces and lightly blanched for 3 to 4 minutes  
Freshly ground black pepper to taste  
2 tablespoons extra-virgin olive oil  
2 teaspoons red wine vinegar

Combine the tomatoes and green beans in a bowl. Before serving, sprinkle with the pepper, olive oil and vinegar. Serves 6.

### Fresh Blueberry Pie

Pastry for double crust 9-inch pie  
1 cup sugar  
1/3 cup flour  
1 tablespoon lemon juice  
4 cups blueberries  
2 tablespoons butter or margarine  
Milk  
Additional sugar

Preheat oven to 375° F. Line a 9-inch pie pan with half of pastry. Set aside. In a large bowl, combine sugar, flour and lemon juice. Add blueberries and gently toss to coat. Spoon blueberry mixture into pastry-lined pie pan and dot with butter. Top with lattice following directions on pastry package. Trim and flute edges. Brush top with milk and sprinkle with sugar. To prevent overbrowning, cover edge with foil. Bake 25 minutes. Remove foil. Bake 25 to 30 minutes or until top is golden brown. Serve warm or cool. Makes 8 servings. □





# Naturally Wild

story and illustration  
by Spike Knuth

## Canada Warbler *Wilsonia canadensis*

To see a Canada warbler is a real coup for Virginia birdwatchers, because they are not commonly seen, except maybe, during migration. And even then, you are more apt to see it west of the Blue Ridge where some breed. This handsome little warbler tends to be very secretive by inhabiting dense thickets and forest under story, not the upper canopy.

It is a late migrant and migrates across the eastern United States May through early-June. It is often found in association with Wilson's warblers. Most go through Virginia to Canada and the northern tier of states, but some breed in the Appalachians. They seek out dense, damp areas in swamps, bogs, wet ravines, along streams and wet forest

edges. Hardwood forests with a conifer overstory or rhododendron and laurel thickets within a hemlock forest, cedar bog or deciduous bottomlands are chosen.

The males are best identified by their necklace of black streaks across a yellow breast and spectacle-like eye rings. Upperparts are gray, and underparts are yellow. The females are much duller. They have bristles around their bills which aid in catching flying insects, much like flycatchers. Their calls are variable and sputtery, almost impossible to describe in words.

They feed like flycatchers, dashing out of dense shrubbery to catch mosquitoes, flies and moths, often with an audible snap of its bill. They

also glean caterpillars, spiders and beetles from branches, twigs and leaves. They also nest near the ground close to water of some kind. It might be in a rotting stump or log, in a mossy hummock in a spring seep, in a fern clump, or in the upturned roots of a tree along a stream. The nest has no special form and is constructed of leaves, grasses, bark strips, fern rootlets and lined with fine plant fibers and animal hair.

Three to five eggs are laid and only one brood is reared. By July, the young are awing and fall migrations begin in late-July; peaking in early-September. This little 5 1/2-inch bird apparently needs the extra time to travel, for it winters way down in northwestern South America. □







# Looking for a great way to connect with your family?

Fishing and boating are great ways to connect, and participating in a fishing and boating activity is a great way to do it. It's a wonderful opportunity for families to have fun, create new memories and spend time together. Celebrate with us and discover just how much fun fishing and boating can be when you do it together.  
[TAKEMEFISHING.ORG](http://TAKEMEFISHING.ORG)

## "takemefishing"<sup>TM</sup>

NATIONAL FISHING & BOATING WEEK  
JUNE 3 THRU 11



# Virginia Wildlife Magazine



© John R. Ford

## Order Online!

With just the click of a mouse you can order 12 months of *Virginia Wildlife* magazine online using your **VISA or MasterCard**, and have it delivered to your home for just \$12.95 a year. That's a 50% savings off the cover price. While you're there don't forget to check out the *Virginia Wildlife Outdoor Catalog* for that unique and special gift.

[www.dgif.virginia.gov](http://www.dgif.virginia.gov)

*Virginia Wildlife* Magazine subscription calls only 1-800-710-9369

Twelve issues for \$12.95!

All other calls to (804) 367-1000

Visit our Web site at [www.dgif.virginia.gov](http://www.dgif.virginia.gov)